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TECHNICAL CO-OPERATION FOR THE DEVELOPMENT OF SMALL-SCALE INDUSTRIES

Presented by

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PREFACE

In a report prepared in 1962, the Secretary-General of the United Nations made a number of proposals for intensification of action in the fields of economic and social development by the United Nations to further the objectives of the Development Decade.[1/] Action was to be intensified in several areas, including promotion of small-scale industries, establishment of industrial estates and strengthening of industrial advisory services. In these as in other areas, it was considered desirable that a massive and increasing effort be undertaken by governments, a corresponding expansion taking place in supporting activities by the United Nations. In particular, a new impetus would be given to the technical co-operation work of the Organization.

In the period from 1962 to the present, a significant expansion in the above three areas did take place, and is still in progress, both in government programmes and in technical co-operation, research and other activities of the United Nations. At its fourth session, the Committee for Industrial Development felt that the effort of the United Nations Secretariat in promoting technical co-operation projects relating to small-scale industries and industrial estates would be enhanced if a brochure were prepared which would describe in detail United Nations facilities available to assist governments in these fields, and the procedures for obtaining such assistance.[2/]

1/ United Nations, The United Nations Development Decade - Proposals for Action (Sales No.: 62.II.B.2).

2/ Official Records of the Economic and Social Council, Thirty-seventh Session, Supplement No. 6, document E/3869, para. 46. From 1962 to the end of 1966, the unit of the United Nations Secretariat dealing with industrialization, including small industry development, was the Centre for Industrial Development (CID) of the Department of Economic and Social Affairs. It is expected that, further to a decision by the General Assembly at its twenty-first session in 1966, a United Nations Industrial Development Organization (UNIDO) will be created in 1967 as an autonomous organization within the United Nations, replacing CID. An Industrial Development Board will replace the Committee for Industrial Development. UNIDO will be a full-fledged participating agency in the United Nations Development Programme.

This brochure has been prepared in accordance with this recommendation. In a first part, it describes briefly the organization of technical co-operation and the procedures for obtaining assistance. In a second part, it outlines, on the basis of experience gained in the past few years, the types of projects and the types of assistance which may be made available by the United Nations for the development of small-scale industry. A number of typical job descriptions for expert missions, and outlines of requests for assistance from the United Nations Development Programme (Special Fund), derived from actual practice, are presented in annexes.

The brochure is intended for officials of government departments and agencies in charge of small industry development, officials of government departments responsible for technical co-operation programmes, officials of small industry service institutes, industrial extension centres, industrial estate authorities, etc., Resident Representatives of the United Nations Development Programme in developing countries, experts in the fields of small-scale industries and industrial estates, and other interested persons.

While this publication is principally aimed at facilitating the formulation of technical co-operation projects, it may also, in view of the coverage of matters in its second part and in the annexes, serve the secondary purpose of providing a check-list of most of the main components of a small industry development programme. It has been prepared by the Small-scale Industry Section, Policies and Programming Division, Centre for Industrial Development.

I. TECHNICAL CO-OPERATION: ORGANIZATION AND PROCEDURES

The organization of technical co-operation programmes and the procedures for obtaining assistance need to be mentioned only briefly in this brochure. Detailed information is available in other publications of the United Nations.[1/]

In the field of industry, technical co-operation is extended by the United Nations under four programmes: (1) the technical assistance component of the United Nations Development Programme (UNDP), formerly known as the Expanded Programme of Technical Assistance (EPTA); (2) the Special Fund component of UNDP; (3) the regular programme of technical assistance, and (4) the programme of Special Industrial Services (SIS).

Technical assistance

The technical assistance component of UNDP is, in terms of coverage of countries and fields of assistance, the broadest, most diversified and most flexible instrument of the United Nations family of organizations for

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1/ See "The Expanded Programme of Technical Assistance for economic development of under-developed countries" (TAB/1/Rev.4, 1963); The Expanded Programme of Technical Assistance (Sales No.: 64.II.H.2), 1964; United Nations Expanded Programme of Technical Assistance: 15 years and 150,000 Skills (Sales No.: 65.I.18), 1965; The Priorities of Progress: The United Nations Special Fund (Sales No.: 62.I.2), 1961; Targets: An Expanding World Economy - A United Nations Special Fund Report (Sales No.: 63.I.7), 1963; "Project guidelines No. 1" (United Nations Special Fund, SF/PGL/1, 1 June 1964); "Activities in the field of industrial development; Organizational arrangements for industrial development and provision of additional financing on a voluntary basis for operational activities" (United Nations General Assembly, A/6070/Rev.1, 27 October 1965); "Report on the United Nations Special Fund and the Expanded Programme of Technical Assistance in 1965" (Report by the Administration of the United Nations Development Programme, DP/L.15, 22 April 1966); "Technical assistance activities of the United Nations" (Report of the Secretary-General: Regular programme of technical assistance, DP/RP/1/Add.2, 20 May 1966).

extending assistance to the developing countries.[2/] Under this programme, the United Nations provides principally expert services, and also fellowships, scholarships and some equipment for a variety of projects in all fields of development, including those described in the second part of this brochure.

In general, the technical assistance operations are limited in size and duration. One or several experts, serving separately or as a team, may be sent on missions the duration of which may vary from a few weeks or a few months to one or two years - the upper limit being explained by the fact that technical assistance operations are programmed on a biennial basis. Mission duration may be extended at the request of the government.

Fellowships are available either as part of a technical assistance operation, for instance when an award is made to the national counterpart of a United Nations expert, or as a separate project. Their purpose is to provide specialized training overseas to persons discharging functions at the professional, management or supervisory level, whose newly acquired knowledge will be expected to benefit their country's development effort. Various courses, study tours, group training and in-plant training are available to United Nations fellowship-holders for periods varying from a few weeks to one year and sometimes more.

Some equipment and supplies may be made available for demonstration purposes, but only as an integral part of technical assistance projects.

The programme is financed by voluntary contributions of States Members of the United Nations or of the specialized agencies.

2/ The United Nations, nine specialized agencies of the United Nations (ILO, FAO, UNESCO, ICAO, WHO, WMO, ITU, UPU and IMCO) and the International Atomic Energy Agency (IAEA) participate in the programme. Some of these agencies provide, under this and their own programme, technical assistance to small-scale industries. In particular, the ILO is active in the field of training, management development, co-operatives, etc.; it is also extending assistance to handicrafts and cottage industries. These fields of assistance, however, are not discussed in this publication, which is concerned only with the technical co-operation activities for the development of small-scale industries carried out by the United Nations.

Special Fund

The Special Fund component of UNDP is concerned with pre-investment projects which require a team of several experts for a longer period of time - generally not exceeding five years - fellowships for the counterparts of the experts to enhance their services to the project and to enable them to take over the experts' functions after Special Fund assistance ends, and specialized equipment necessary for the project but unobtainable in the recipient countries. These projects involve a substantial contribution on the part of both the government and UNDP.[3/] In the field under consideration, they relate to surveys and feasibility studies, establishment of institutions and facilities, and pilot and demonstration plants. The Special Fund is particularly interested in projects involving the establishment or strengthening of permanent institutions or facilities, its assistance covering several or all phases of the project, from early planning to beginning of operation. The programme is also financed by voluntary government contributions.

Regular programme of technical assistance

The regular programme of technical assistance of the United Nations is financed from the budgetary resources of the Organization and is programmed on an annual basis. Regular programme funds are principally used to set up short-term assignments, meet urgent requests arising at short notice, establish regional and inter-regional projects and act as "seed money" in relation to United Nations expanded programme and Special Fund projects.

3/ Special Fund projects normally require financing of at least $250,000 from the Special Fund account (at least $125,000 in the case of industrial feasibility studies). The contribution of the Special Fund is scheduled to decrease and that of the government to increase during the period of the project.

Special Industrial Services

In the course of 1966, a new programme of assistance for the industrial development of developing countries was established as part of the technical co-operation machinery of the United Nations - the Special Industrial Services (SIS). A fund financed by voluntary contributions is used for special operations by joint approval of the Administrator of UNDP and the Commissioner for Industrial Development. 4/ Assistance under SIS is given particularly for: (a) manufacturing industry projects for which feasibility studies have already been carried out, in order to promote their financing and implementation; (b) existing manufacturing enterprises, whose performance needs to be improved, and (c) exploratory and advisory activities leading to one or both of the above activities. Though operations under SIS may lead to, or be generated through, technical assistance or Special Fund projects, SIS financing is not provided to prepare technical assistance or Special Fund projects. As a rule, SIS projects have a character of urgency, and assistance is given speedily. "Trouble-shooting" missions may be undertaken under SIS.

Capital investment is not financed under any of these programmes. 5/

Under all four programmes, 6/ assistance is extended only at the request of governments and given only through governments. Requests for regional projects should be submitted by a group of governments. Requests are channelled

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4/ The Executive Director of UNIDO, when this organization is established.

5/ Such financing may be provided by the International Bank for Reconstruction and Development and its two affiliates - the International Finance Corporation and the International Development Association.

6/ Technical assistance funds, under both the regular programme and UNDP, are being utilized for financing the cost of the Programme for the Provision of Operational, Executive and Administrative Personnel (OPEX), under which senior experts are made available to governments to serve as temporary public officials. Operations are also financed to a limited extent from "funds-in-trust", which are funds received from Governments, non-governmental organizations and individuals for providing technical assistance additional to that provided under the normal programmes. Funds are also earmarked for the services of volunteer workers (associate experts) paid for by donor governments. Under these programmes, assistance may be given in a variety of fields, including small industry development.

through the Resident Representatives of UNDP, who act as the principal channel of communication between the United Nations and the government of the country to which they are assigned. Under SIS, requests may be addressed to either UNDP or CID (UNIDO) through the Resident Representative.

In the field of industry, experts are recruited by the United Nations on the basis of the requests received. The appointment of any expert is subject to the approval of the requesting government. During the course of their assignments, the experts receive the necessary administrative and technical support and guidance from Headquarters, and send periodic progress reports to it. In recent years, advisory services in the field of industry have increasingly been extended to governments by staff members and technical advisers of the United Nations Secretariat, under the same administrative procedures.

Candidates for fellowships and scholarships should be nominated by their governments. Applications for awards should be addressed by candidates to the appropriate national government department and forwarded by the government to the United Nations through the Resident Representative. Final selection of fellows and arrangements for placement are made by the United Nations.

Government requests for assistance are often stimulated through visits of staff members and technical advisers of the United Nations Secretariat, through seminars and working groups, research publications and other means. In some cases, the services of one or several experts may be provided under UNDP (technical assistance) to assist in the formulation of projects and the preparation of requests. 7/

7/ In this connexion, it should be noted that assistance for drawing up an initial submission to the Special Fund would be within the competence of UNDP. If it is established, as a result of such assistance, that the project is suitable for Special Fund financing, a formal request may be submitted to it. Should it be found to be within the Fund's terms of reference but, subsequent to a technical evaluation, to need reformulation or revision, expert assistance might be provided for this purpose by the Special Fund, under a "preparatory allocation".

The responsibility for implementing Special Fund projects in the field of small-scale industry is assumed by the United Nations or the International Labour Organisation in the capacity of Executing Agency, in accordance with the respective jurisdictions of the two organizations. A detailed description of the arrangements for the execution of a project is contained in a Plan of Operations, which is a tripartite agreement between the government, the UNDP (Special Fund) and the Executing Agency.

Programmes proposed for financing under either the technical assistance or the Special Fund component of UNDP are reviewed by the Administrator of UNDP with the Inter-Agency Consultative Board and then submitted to the Governing Council of UNDP for approval. The Governing Council of UNDP, which consists of thirty-seven members, considers and approves projects and programmes, allocates funds and provides general policy guidance and directions for the United Nations Development Programme as a whole. The proposals of the Secretary-General under the regular programme of technical assistance are also placed before the Governing Council for review and comment. The Governing Council meets twice a year and submits reports and recommendations to the Economic and Social Council.

II. TYPES OF SMALL INDUSTRY PROJECTS

The types of projects in the field of small-scale industry and the nature of assistance provided are considered under a number of broad categories; some of them are illustrated with examples from recent experience. These categories relate to: 1. Policies, programmes and general promotion measures; 2. Industrial surveys and feasibility studies; 3. Industrial extension and training; 4. Financing; 5. Industrial estates; 6. Technological research, assistance and training; 7. Engineering and managerial advice to individual industries, and 8. Marketing and export promotion. Since assistance to a developing country may be required under more than one category, the types of assistance may be variously combined in the preparation of an individual country programme or project.

Policies, programmes and general promotion measures

In many countries, assistance is needed for formulating policies, drawing up programmes and adopting measures for the promotion of small-scale industry as part of over-all industrial development programmes. In some cases, a statement of policy, an action programme and targets should be prepared for incorporation in the national development plan. In other cases, guidance in policies and programmes is required by a department of industry, a development corporation, a bank or a financial corporation. Guidance may often be required in formulating legislation providing for fiscal and financial incentives to small-scale industries. In order to formulate these policies and programmes, studies should be made of the existing state of development, resource endowment, demand and market forecasts, possibility of mobilization of capital and entrepreneurship, availability and potential development of skills, foreign trade, etc. The scope for import substitution, the creation of employment opportunities, the relative priorities of different types of industries, the need for industrial decentralization, the social objectives of government policy these have all to be considered. The programmes call for the adoption of legislative and administrative measures, such as fiscal and financial incentives, supervised credit programmes, marketing aid and export promotion, government procurement programmes, training courses, allocation of import quotas and scarce raw materials, freight concessions, subsidized rates for supply of land and utilities, and technical and managerial assistance to industrial enterprises. The measures proposed may also include encouragement to action by private groups, such as co-operatives or industrial associations. Assistance may also be needed for organizing promotion and development institutions, and for formulating their policies and programmes.

Assistance for this category of projects may be provided under the regular technical assistance programme and the technical assistance component of UNDP. The nature of assistance depends on the requirements of the country. Frequently a review of existing policies and programmes, and recommendations for future action, including further technical co-operation projects, may be made in the course of a brief mission, and direct advisory services on the part of staff

members and technical advisers of the United Nations at Headquarters or at a regional economic commission have been increasingly provided for this purpose. For a more thorough study, the services of an expert may be required for a period of a few months to one year. Sometimes, the need is for a multi-expert team covering industrial development policy as a whole, one member of the team being an expert on small industry.

The qualifications of experts required for assignments in the field of policies, programmes and promotion measures depend again on the requirements of the country. In general, the services of either an industrial economist, an industrial financing expert or an administrator, with considerable experience in the formulation and administration of small industry development programmes, are called for.

Examples of technical assistance operations in one country each from Africa, Asia and Latin America will illustrate the nature and type of assistance provided under the technical assistance programme.

At the request of the Government of a newly independent industrializing country of Africa, a staff member of the Centre for Industrial Development made a short visit to that country in November 1964, to review its industrialization policies and programmes, to formulate a programme for the development of small-scale industries and to recommend further measures of technical assistance from the United Nations. The Government accepted broadly his recommendations and requested the United Nations to provide in 1965 the services of an industrial economist for a period of one year to elaborate further the action programme, and begin to implement it in co-operation with the planning organization, the department of industry and the national development bank. The programme includes fiscal and financial incentives, feasibility studies, promotion of indigenous entrepreneurship, supervised credit, technical assistance for small-scale industries, industrial estates and other measures. The expert is now in position, and, with his assistance, the Government is drawing up plans which may result in the establishment of an institute to carry out this programme on a nation-wide basis.

In 1965, the Government of an Asian country requested UNDP (technical assistance) to provide expert advice in formulating a policy and programme of development of modern small-scale industries and businesses through mobilization of private financing and entrepreneurship, and in setting up and managing a new corporate organization to carry out the programme. The corporation's functions would be to encourage the establishment and modernization of small-scale and medium-sized industries and commercial enterprises, to extend advisory services in technology and management, to facilitate credit and financing, to organize training, marketing, transport and other related activities. The United Nations made available in 1966, the services of a chief planning adviser to assist the manager of the corporation in policies, programmes and organization, and of an industrial engineer to provide technical advisory services to small entrepreneurs. Each expert was appointed for two years.

At the request of the Government of a Latin American country, a team consisting of a staff member and a technical adviser of the Centre for Industrial Development visited the country in May 1964 to advise on the Government's policies and programmes for the development of small-scale industries. They recommended that fiscal and other benefits, which, heretofore, were limited to artisan undertakings, with a resulting inhibiting effect on their growth and modernization and their transformation into modern manufacturing establishments, be extended to small-scale industries, and, for this purpose, proposed a definition of this sector; they outlined measures to stimulate entrepreneurship from sources other than artisan undertakings, programmes of technical guidance and of financial and marketing assistance, and a policy and programme for the establishment of industrial estates; they suggested that the services of an expert be requested from the United Nations for the latter purpose. In January 1965, the Government enacted a revised law for the development of artisan and small-scale industries; with the assistance of an expert and further advice from CID, it formulated a project for the establishment of a pilot industrial estate. At the Government's request, the services of an expert in industrial development, including promotion of small-scale industries, were provided by UNDP (technical assistance).

Three typical job descriptions for posts in the field under consideration are given in sections A, B and C of annex I.

Under the Special Fund component of UNDP, assistance may be provided for the establishment of new agencies and institutions or for the strengthening of existing ones to carry out programmes of small industry development and to implement general promotion measures. Such institutions may be departments or agencies of the ministry of industry, or an industrial development bank or corporation, or a development agency either devoted exclusively to small industry promotion or having a division dealing with small industry. An outline of a hypothetical request to UNDP (Special Fund) for assistance in the establishment of a small industry development organization is given in section D of annex I.

Industrial surveys and feasibility studies

In many countries where few modern small-scale industries exist, surveys and feasibility studies are needed for pinpointing the possibilities open to small-scale industries and for stimulating entrepreneurship to take up prospective lines of manufacture. The work involved includes the undertaking of area surveys aimed at determining prospects of development in various localities; the drawing up of lists of industries whose establishment is feasible and desirable; the preparation, for these industries, of "model schemes" describing requirements in capital, plant and equipment, employment, raw materials, processing and marketing prospects; the evaluation of projects already prepared by entrepreneurs, and assistance in formulating "bankable" projects for obtaining credit.

Under the technical assistance programme, the United Nations may provide the services of one or more experts - according to the needs of the country - for undertaking surveys and feasibility studies. In many cases, the experts are expected to make recommendations on further assistance which may be requested from the United Nations. The experts may be economists and/or engineers - industrial, mechanical or chemical - working either individually or as a team. A frequent pattern of assistance is to provide a two-man team

consisting of an industrial economist and an industrial engineer, or a mechanical engineer and a chemical engineer.

Hypothetical terms of reference for an industrial engineer to undertake feasibility studies and model schemes are given in annex II.

Work in this area is frequently carried out, as one of their functions, by industrial development corporations, small industry development agencies and other institutions whose establishment may be assisted by UNDP (Special Fund). In recent years, a number of specialized industrial study and development centres have been set up in certain countries with the assistance of the Special Fund. These centres undertake surveys and feasibility studies for industries of all types and sizes, including small-scale industries.

Industrial extension and training 8/

Many developing countries need assistance in providing industrial extension and training services to stimulate local entrepreneurship; to impart knowledge and information on industrial possibilities, processes and methods of production; and to upgrade various types of skills. Such services are provided by individual experts or by small industry service institutes, industrial extension centres and training institutions. For instance, an expert may be needed to organize a small industry service institute, select its location, draw up the requirements of personnel and equipment, and formulate its programme of action. Another expert may be required to assist in evolving suitable methods of industrial extension and training. Assistance may also be provided in organizing the training of extension workers. Fellowships are available under the technical co-operation programmes for in-plant training in particular trades or industries. Assistance in this field may be made available under the programmes of the United Nations or the International Labour Organisation, in accordance with the respective jurisdictions of the two organizations.

8/ See also the section below on "Engineering and managerial advice to individual industries".

A project in this category may be financed from either the technical assistance component of UNDP or the Special Fund component, depending on its size and duration.

Hypothetical terms of reference for the post of an expert in small industry extension methods are given in annex III.

Financing

Small-scale industries need credit at liberal conditions and terms taking into account their inability to command sufficient resources through commercial channels. Development banks and corporations, and other public financial institutions often need to be assisted in formulating and implementing special programmes of financing for small-scale industries. The most effective programmes are the "supervised credit" schemes such as plans for hire-purchase of machinery, which permit financial aid to be linked with technical assistance. Industrial extension departments are sometimes set up in financing institutions, to lend assistance to borrowers from application for credit to follow-up of use of funds. The establishment of such departments may be assisted by UNDP (Special Fund). Other programmes are aimed at facilitating credit to small industries by commercial banks, for instance, through insurance and guarantee systems which reduce or eliminate the risks incurred by the lender.

The services of experts may be provided under the technical assistance programmes for formulating and operating schemes of liberalized credit, insurance and guarantee systems, supervised credit, hire-purchase of machinery etc. Assistance under SIS can be provided to governments to study financial requirements for additional equipment, diversification of production or working capital, for specific industrial projects that have encountered difficulties in achieving successful operation.2/

Hypothetical terms of reference for the post of an expert on financing of small-scale industries are given in annex IV.

2/ Idem.

Industrial estates

The effectiveness of the industrial estate in stimulating entrepreneurship and providing integrated and sustained assistance to small industrialists is well recognized in the developing countries, and requests for assistance from the United Nations in this field have been rapidly increasing in recent years. The nature and extent of the assistance required have varied, ranging from services of one or two experts for a few weeks to a team of several experts for periods of up to five years; fellowships and equipment have also been provided. Industrial estate projects have been assisted under all four programmes.

Assistance under the technical assistance programmes has ranged from a brief visit, say one or two weeks, by a staff member or a technical adviser of the Centre for Industrial Development or of a regional economic commission, or an outside expert, for the purpose of drawing up a programme of United Nations assistance in this field, to provision of a two or three-man team for a period of up to two years to assist in the planning and construction of an estate, the establishment and operation of common service facilities, the management of an existing estate, and other assignments.

The first step usually taken by the United Nations in response to a government request for assistance in the establishment of an industrial estate is to send an expert or sometimes a team of two or three experts for a short period - one month to four months - to make a feasibility study, select the location and site, estimate costs for an estate of the required type and size, draw up the preliminary plans for layout and construction, and schedule the development of the estate. In some cases, longer-term missions, by a team consisting of an industrial economist, an industrial engineer and a civil engineer, are required to plan networks of industrial estates and related facilities. Such missions might range from six months to one year.

Sometimes, further United Nations assistance is not needed, the government services being able to develop the project up to the final stage, including the preparation of blueprints, the carrying out of construction and the management of the estate once it is established.

In many cases, however, further assistance is requested, for varying periods of time, on the part of specialists in fields often different from those required in the first stage. Thus, a construction engineer may be needed to assist in building the estate; mechanical or industrial engineers to provide advice in setting up and operating common service facilities such as maintenance and repair shop, forging and heat-treatment shop, foundry, die and tool making centre, quality control centre, and so on; a chemical engineer to assist in the establishment and operation of a testing laboratory; and a management adviser to help in the operation of the estate. Most of these specialists also provide assistance to the small entrepreneurs established on the estate and, to the extent possible, outside the estate.

Assistance required after feasibility studies have been undertaken may be provided under either the technical assistance programme or SIS. Under SIS, assistance to industrial estate projects may be given in cases where plans have gone beyond the feasibility study stage and difficulties are encountered in the achievement of the planned development objectives. The difficulties may relate to construction, financing, management, promotion of entrepreneurship, operation of common service facilities, and so on.

Hypothetical terms of reference for a team consisting of an industrial economist, an industrial engineer and a civil engineer required for initial planning of an industrial estate are given in annex V, sections A and B. Section C contains the terms of reference for a tool-room expert required for operating common service facilities.

UNDP (Special Fund) is prepared to consider industrial estate projects involving an initial feasibility study, the preparation of the layout and plans, provision of advice during the construction phase, and the establishment and provision of certain common facilities. In special circumstances, assistance may be provided in the initial administration and direction of an estate, including training of personnel for the administration and maintenance of common services.

Since its assistance is limited to pre-investment operations, the Special Fund does not contribute to the design or construction of industrial plants in the estate, nor does it provide these with capital equipment 10/.

The establishment of certain assistance and servicing facilities for small-scale industries can be financed under a Special Fund project, since UNDP recognizes the particular effectiveness of providing such facilities to the occupants of an industrial estate. For this reason, the Fund may consider requests for the establishment of a small industry service institute as part of an industrial estate. It may also support the establishment of pilot plant facilities on an industrial estate. The services and facilities made available as a result of Special Fund support would not necessarily be restricted to industries housed on the estate.

An outline of a hypothetical request to UNDP (Special Fund) in the establishment of a demonstration industrial estate is given in section D of annex V.

The number of experts whose services may be needed to carry out a Special Fund industrial estate project, their field of specialization, period and scheduling of service and terms of reference, and the organization of the team vary from one project to another. Two examples relating to recent projects may be indicative of the requirements in this connexion.

Subsequent to the submission by the Government of an Asian country of a request to the Special Fund for assistance in the establishment of an industrial estate for small-scale and medium-sized industries, a team of two experts - an industrial economist and a civil engineer - was sent on a short-term mission (a total of six man-months) to make a preliminary survey. In accordance with its terms of reference, the team selected, among alternative possibilities, the location and site for the estate, drew up a list of industries which might be set up thereon, prepared a provisional layout and estimated construction and development costs; it also made recommendations on the establishment of an industrial estate authority and on incentives and promotional measures to accelerate occupancy of the estate.

10/ Financing of investment in industrial estates may be provided by the International Development Association.

The project was approved by the Governing Council of the Special Fund and a project manager, a mechanical engineer and a civil engineer were appointed during the first year of the project. A managing director, a deputy managing director and a staff of thirty-five technical, administrative and service personnel were appointed by the Industrial Estate Authority. A site of fifty acres (20.2 hectares) was purchased. Studies were carried out of the layout and physical planning of the estate, including common service facilities and utilities. Specifications for equipment of the common service facilities - a mechanical workshop and a testing laboratory - were drawn up and requisitions for machinery and equipment were prepared and sent to UNDP (Special Fund) which will provide these as part of the project.

In the second year, the team will be joined by an industrial engineer, a chemical engineer and a foundry metallurgical engineer who will operate the common service facilities and provide technical assistance to the occupants of the estate as well as to small industrialists in the surrounding area. While the team concentrates its work on the estate under consideration, it also assists the Government in planning industrial estate projects in other parts of the country.

The Special Fund also provides fellowships to the counterparts of the United Nations experts.

At the request of the Government of an African country, a team of two officials of the Centre for Industrial Development visited the country on a short mission during which, in consultation and in co-operation with government officials, they drew up, in its main lines, a nation-wide programme of promotion of, and assistance to, small-scale industries and recommended, as part of this programme, the establishment of a first industrial estate as a pilot and demonstration project, and of an adjoining industrial area for industries of all sizes. They selected a site for the estate and area, estimated the construction and development costs and assisted the Government in drafting a request to the Special Fund for assistance in carrying out the project.

During the five-year period of the project, fifteen standard factories of 2,000 square feet each (186 square metres) and fifteen factories of 5,000 square feet (464 square metres) will be erected on part of the 23 acres (9.3 hectares) initial site of the estate (to be doubled in the future). The industrial area - of a total of 104 acres (42 hectares) - will be developed at the rate of 5 acres (2 hectares) per year during the period of the project. The common service facilities will include initially a mechanical workshop and tool-room and a testing laboratory.

The Special Fund will provide a team of seven experts - project manager, industrial economist, industrial engineer, civil engineer, chemical engineer, mechanical engineer and industrial loan evaluator - short-term consultants, fellowships, and equipment for the common service facilities.

The project was approved by the Governing Council and a project manager is being recruited.

Hypothetical terms of reference for the post of a chief adviser or project managerare included in section E of annex V.

Technological research, assistance and training

A considerable part of the general work of industrial research and technological institutes in developing countries is of value for the development of small-scale industries. Many of these institutes undertake research on problems of specific interest to small-scale industries, such as design of machinery and equipment with limited production capacity, and frequently provide technical assistance and training to small entrepreneurs. Assistance may be needed for the establishment and operation of such institutes and of more specialized organizations such as prototype production and training centres (to design prototypes of suitable machinery and equipment and to provide training to small entrepreneurs in manufacturing techniques), production-and-training centres (where on-the-job training is provided in actual manufacturing operations), industrial design centres, quality control and testing centres, and so on.

Under the technical assistance programmes, various specialists may be needed by existing research, technological and training institutions and fellowships may be awarded to the national personnel. Under the Special Fund component of UNDP, assistance may be provided for establishing new centres or institutes, or strengthening and diversifying existing ones.

As an example, the hypothetical terms of reference for the post of a chemical engineer in a testing laboratory are given in annex VI.

Engineering and managerial advice to individual industries

In the developing countries, newly created as well as established small enterprises need assistance in every aspect of production and management. Assistance and advice may be needed, for instance, for planning and laying out a site and factory, importing, installing, operating, maintaining and repairing machinery and equipment, procuring raw materials, processing, maintaining quality control, packaging, selling and shipping goods, book-keeping, and so on.

Under the technical assistance programmes, the services of industrial engineers, specialized or non-specialized, may be provided to assist individual small-scale industries, and fellowships and in-plant training programmes may be made available to the national personnel. Specialists have been provided by the United Nations in a variety of fields, usually to assist industries concentrated in certain towns or regions. Examples are: experts in silk weaving, footwear, optical lenses, electrical measuring instruments, tool and die making, foundry work, and so on.[11/]

The provision of technical counselling is one of the most important functions of small industry service institutes and industrial extension centres, the establishment of which may be assisted by UNDP (Special Fund). It is also extended by servicing centres and common service facilities on industrial estates, where the concentration of industries of certain types makes it particularly effective and economical.

11/ Assistance in management development and productivity may be provided by the International Labour Organisation.

Assistance under SIS can be provided to existing manufacturing enterprises whose performance needs to be improved or to feasible projects that have encountered difficulties in establishment or in achieving successful operation. Such assistance may include: study and analysis of the factory problems and drawing up a programme of remedial assistance; providing short-term services in management, cost control, production, quality control, marketing, etc; assistance in rehabilitating industries which are idle or work at a fraction of capacity because of slumps, management failure, withdrawal of foreign or expatriate managers or technicians, and other reasons; assisting in obtaining additional "key" equipment needed for satisfactory operations; assistance in obtaining additional financing; providing periodical supervision to ensure continued satisfactory performance.

Hypothetical terms of reference for an expert in industrial engineering (small-scale industry) are given in annex VII.

Marketing and export promotion

Many developing countries need assistance in the field of domestic marketing and export promotion of small industry products. The assignments of experts cover market surveys; sales promotion and advertisement techniques; quality certification and marking; packaging; developing marketing outlets and relations between manufacturers, distributors, wholesalers and retailers; organizing marketing co-operatives of manufacturers or a government-sponsored marketing corporation; organizing a government store purchase programme; organizing exhibitions, and so on.

The United Nations has also provided assistance in studying specific export markets, for instance, in the United States and western European countries, for certain small industry products manufactured in a developing country.

Two typical job descriptions for assignments in this category are given in sections A and B of annex VIII.

ANNEXES

The annexes include typical job descriptions for selected expert assignments in the different categories of small-scale industry projects listed in part II of this brochure. In some categories, several job descriptions are included, as it is thought that these examples, in spite of some overlapping, will be useful and convenient for reference. In order to offer as broad a frame of reference as possible, the functions of the experts are, in many cases, outlined in a more comprehensive and more detailed fashion than may be required in actual practice, and appropriate modifications may need to be made. Also, functions under different categories may be combined in any given job description. The job descriptions are hypothetical, but are derived from actual experience.

In addition to job descriptions, two outlines for the preparation of requests to the United Nations Development Programme (Special Fund) for assistance in the establishment of a small industry development organization and a demonstration industrial estate, respectively, are included in annex I, section D, and annex V, section D.

Annex I

POLICIES, PROGRAMMES AND GENERAL PROMOTION MEASURES

Hypothetical terms of reference for three expert posts in the field of policies, programmes and general promotion measures are given below.

Sections A and B contain the job descriptions of, respectively, an industrial economist and an industrial engineer, whose assignments are complementary to one another. In this instance, it is assumed that the industrial economist is appointed for a period of one year to formulate policies and programmes and carry out economic surveys. Six months after he has undertaken his duties, he will be joined by an industrial engineer, also appointed for one year, who will assist him in the technical aspects of programming and will begin to implement certain projects under the programme. Both assignments may be extended, if need be. In other instances, the two missions could be carried out concurrently or one after the other, and periods might be different.

Section C contains the job description of an adviser appointed for a very short mission to recommend measures for reorganizing an existing small industry development agency.

Section D contains the outline of a hypothetical request to the United Nations Development Programme (Special Fund) for assistance in establishing a small industry development organization, either as an independent agency or as part of an institution of broader scope.

A. Industrial Economist (Small-scale Industry)
(Related to B)

Duration: One year, with possible extension

Duties: The expert will advise the Planning Ministry, the Department of Industry, the National Development Bank and other competent agencies on the formulation and implementation of a policy and programme of development of small-scale industry. In co-operation with an industrial engineer, he will assist in:

(a) Drawing up a programme of development of small-scale industries as part of the national industrial development plan;

(b) Carrying out surveys of prospects of small-scale industry development in various localities, taking into account the availability of local resources, skills and other factors, market opportunities, import substitution and trends of demand, and possibilities of subcontracting between large and small industries;

(c) Stimulating local entrepreneurship, in particular in the indigenous sector of the population, by providing guidance on industrial opportunities, carrying out feasibility and pre-investment studies, facilitating credit, assisting in formalities and steps leading to the establishment of industrial undertakings, and disseminating economic, technical and legal information relating to the development of small-scale industry;

(d) Organizing and setting up an industrial extension service providing technical and managerial counselling and assistance to small entrepreneurs at all stages of establishment and operation; a/

(e) Drawing up programmes of financial assistance at liberal conditions, including supervised credit, supply of machinery on hire-purchase, etc.;

(f) Drawing up a programme of tax and customs incentives, government procurement schemes and other concessions,

(g) Undertaking feasibility studies for the establishment of industrial estates including standard factory buildings, power and other utilities, common service facilities, industrial extension and information services, and advising on the planning and organization of the estates;

(h) Formulating training programmes, including vocational, supervisory and in-plant training, and assisting in their organization; a/

(i) Encouraging the establishment of co-operatives of small industries a/ and of subcontracting arrangements with large enterprises;

(j) Facilitating co-operation and co-ordination among different agencies serving small-scale industries such as technological research institutes, training centres, financial institutions and so on;

(k) Training counterpart personnel;

(l) Advising on further assistance which might be requested from the United Nations.

Qualifications: A highly qualified industrial economist, with knowledge and experience in formulating policies and programmes for the development of small-scale industries in the developing countries. Experience in the organization and operation of promotion agencies and in the establishment of industrial estates would be desirable.

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a/ Assistance in management development, productivity improvement, training and co-operatives may also be provided by the International Labour Organisation.

B. Industrial Engineer (Small-scale Industry)
(Related to A)

Duration: One year, with possible extension

Duties: The expert will advise the Planning Ministry, the Department of Industry, the National Development Bank and other competent agencies on the formulation and implementation of a programme of development of small-scale industry drawn up with the assistance of an industrial economist provided by the United Nations. In particular, he will assist in:

(a) Drawing up a list of small-scale industries whose establishment is feasible and desirable in different parts of the country and determining their priorities, taking into account the resources and needs of different areas, and the various measures of encouragement and support provided in the programme;

(b) Carrying out detailed feasibility and pre-investment studies on the priority industries, preparing "bankable" projects for the establishment of new small-scale industries and the expansion and modernization of existing ones and providing technical and economic information to prospective entrepreneurs;

(c) Setting up an industrial extension service and providing advice and assistance to small industrialists throughout all stages of establishment and functioning - installation, operation, maintenance and repair of equipment, improvement of production processes, quality control, accounting and cost accounting, marketing and so on.

(d) Contributing to the planning, establishment and operation of industrial estates and, especially, to the establishment and operation of common service facilities, such as forge, foundry, mechanical workshop, electroplating workshop, maintenance workshop, and so on, and to the organization of a technical assistance and information service, as part of the industrial estate;

(e) Training counterpart personnel.

Qualifications: Industrial engineer with thorough knowledge, theoretical and practical, and considerable experience in small-scale industries of different types, including feasibility studies and methods of operation. Experience in services and facilities for small-scale industries as well as industrial estates would be desirable.

C. Small-scale Industry Development Adviser

Duration: Six weeks

Duties: The expert will review the policies and programmes of the small-scale industry development agency, its present staffing and organizational pattern and submit recommendations to the Government concerning the agency's organizational structure, methods of working and programme of action. He will also make recommendations on further assistance which might be requested from the United Nations by the Government.

Qualifications: A top-level industrial economist, engineer or administrator, having extensive experience in the organization and operation of small-scale industry development agencies.

D. Outline of a Hypothetical Request to the United Nations Development Programme (Special Fund) for Assistance in the Establishment of a Small-scale Industry Development Organization

I. BACKGROUND INFORMATION LEADING TO THE JUSTIFICATION OF THE PROJECT

1. The industrial sector and the small-scale industry sector in the country's economy

General information on economic factors bearing on the development of industry. Whenever possible, data should be given on the share of industry and of small industry in the gross domestic product, employment in manufacturing, type and number of industrial enterprises, etc. Analysis of obstacles to the expansion and modernization of small industry.

2. Policies and programmes for development of small-scale industry

(a) Plans, programmes and major projects. Role assigned to the public and private sectors in industrialization plans and programmes. Industrial investment policies, fiscal and financial incentives, legislative and other promotion measures.

(b) Institutional framework: government departments and agencies; autonomous and semi-autonomous organizations for industrial promotion, technical and financial assistance and servicing, and industrial research.

(c) Technical assistance already received in the field of development of small-scale industry.

3. Justification of the project

(a) Analysis of developments under paragraphs 1 and 2(a), (b) and (c) above which justify the proposal to set up a small-scale industry development organization.

(b) Explanation of the contribution which the project is expected to make to the development of the country. This should relate to its immediate significance, e.g., in improving policy making and planning, programming and implementation of specific projects, operation co-ordination of action of various institutions, etc

II. THE PROJECT

1. Origin of the proposal

Historical summary of any work previously carried out and an account of when and where the project originated, for instance, a Government department, the advice of an expert, etc. The relevant substantive documentation should be annexed to the request.

2. Description of the project

(a) Functions of the proposed small-scale industry development organization

The following list of functions is presented as a guide-line and may be modified as necessary:

(i) the formulation of policies, plans and programmes of development of small-scale industry;

(ii) the undertaking of surveys of possibilities of development of small-scale industries on a national or regional basis;

(iii) the preparation of "model schemes" for industries of high priority;

(iv) the undertaking of marketing surveys and provision of counselling, guidance and information to small producers;

(v) the planning, establishment and management of industrial areas and industrial estates;

(vi) the provision of common service facilities, such as a tool-room, a machinery repair centre, a testing laboratory, in or outside of industrial estates;

(vii) the provision of industrial advisory and extension services, such as information on prospective industries, advice on and demonstration of modern technical processes, preparation of designs and blueprints, management counselling, assistance in obtaining government contracts, in making subcontracting arrangements with large industries, and so on;

(viii) the conduct of training courses for all categories of personnel of small-scale industries including entrepreneurs;

(ix) the undertaking of research on problems relevant to small industry development and, where necessary, obtaining the assistance of industrial research institutes, universities, etc.;

(x) the co-ordination of action in the field of small industry development of various government and management agencies, such as hire-purchase corporations, credit institutions, import licensing authorities, etc.

(b) Organization

(i) Legal status

(ii) Functional organization

(iii) Financial arrangements

3. Assistance requested from the Special Fund

(a) Duration of the assistance; time-table showing estimated date for work on the project, phasing and scheduled date of completion.

(b) Number of experts, fields of specialization, length of service and specific tasks within the project.

The project manager is usually appointed first; other members of the team may join their posts at different times and for different durations; provision may be made for a number of man-months of short-term consultants. Job descriptions for experts who may be needed in such operations are attached for illustrative purposes.

(c) Number, field of study and duration of fellowships for training abroad.

Such fellowships may be required for the counterparts of the United Nations experts as well as for other national personnel engaged in the project.

(d) Types of equipment and supplies required.

4. Government counterpart contribution

(a) Staff, both counterparts of the experts and auxiliary personnel;

(b) Land, buildings and new construction;

(c) Equipment;

(d) Ancillary services.

5. Financing

(a) Cost of Special Fund assistance, by categories as per 3(a) to (d) above, on an annual basis for each year of the project. Special Fund assistance will not normally continue beyond five years, and should diminish in each of the last three years with the Government assuming a steadily increasing responsibility for its continuity;

(b) Government counterpart contribution, by categories as per 4(a) to (d) above, on an annual basis.

The Special Fund will not finance expenditures in local currencies, nor will it necessarily meet all foreign currency costs of a project. The Government counterpart contribution may be made either in cash or in kind, or both.

Where the Special Fund supplies the services of experts, the Government will be expected to pay to the Special Fund in local currency an additional sum equal to 15 per cent of the full cost of such experts as a cash contribution towards the local operating costs of the project.

Annex II

INDUSTRIAL SURVEYS AND FEASIBILITY STUDIES

Industrial Engineer

Duration: One year

Duties: The expert will advise the Government on the types of industries which can be established in the country during the period of the national plan. In particular, he will:

(a) Carry out techno-economic studies of the types of industries of all sizes, especially small-scale industries, which can be established in different regions of the country, taking into consideration resources of raw materials, availability of power, water and other utilities, labour, internal and external markets as well as the objectives of the national plan; select the location of industries and indicate priorities of development;

(b) Select, among the industries whose establishment is possible and desirable, a number of projects of high priority, and prepare for these detailed feasibility and pre-investment studies, including specifications and estimated cost of plant, machinery and equipment, raw materials, manpower, manufacturing processes, lines of products, markets, etc. The expert will formulate "bankable" projects for submission to prospective entrepreneurs and financing institutions. The projects

will include both large-scale and medium-sized industries, which could attract foreign investment, and small-scale industries, which would be established and managed, with the necessary assistance, by indigenous entrepreneurs. The expert will have at his disposal the services of short-term consultants for a total duration of four man-months, for making some of these studies;

(c) Prepare "model schemes" or "industry fact sheets" for certain small-scale industries for providing guidance to prospective entrepreneurs. The "model schemes" will describe the products to be manufactured, the size of plant and the type of equipment, the production processes, the prospective markets, the requirements in fixed capital for land, buildings, machinery and equipment, the requirements in working capital for materials, stores, wages and other charges, and an estimate of the income and expenditure of the enterprise, and of its anticipated profitability;

(d) Make recommendations on legislative, administrative, institutional and other measures required for accelerating the establishment of industrial undertakings as well as on further United Nations assistance which might be needed for implementing the programme.

Qualifications: An industrial engineer with theoretical knowledge and considerable practical experience in making feasibility studies for different types of industries. Experience of industries based on raw materials of agricultural and animal origin would be desirable.

Annex III

INDUSTRIAL EXTENSION AND TRAINING

Expert in Small Industry Extension Methods

Duration: Six months

Duties: The expert will advise and assist the industrial extension agency in adopting appropriate methods and techniques of industrial extension service for existing and prospective small industrial entrepreneurs. For this purpose he will, in particular:

(a) Review the current methods of operation of the extension service and make recommendations for more effective techniques and procedures, including demonstration and training in the agency's workshop and laboratory and the entrepreneurs' factories, organization of seminars and discussions, preparation and publication of information, brochures, use of audio-visual aids, and so on;

(b) Arrange suitable programmes of training of industrial extension personnel;

(c) Advise on the setting up of new extension centres, common service facility centres, mobile workshops, including detailed proposals in respect of land, building, machinery, equipment and personnel, and estimates of fixed and working capital requirements;

(d) Advise on further assistance which might be requested from the United Nations.

Qualifications: The expert should be an industrial engineer with long experience in a responsible position in the production and planning department and, if possible, in the personnel department of an industrial enterprise, or in field work and training in a technical extension service agency. The candidate should be familiar with problems of entrepreneurial motivation, industrial psychology, human relations and personnel development in industry.

Annex IV

FINANCING

Financial Adviser (Small-scale and Medium-sized Industries)

Duration: One year

Duties: The expert will advise the Government on financial policies and programmes for the promotion of small-scale and medium-sized industries. In particular, he will advise on:

(a) Legislative, institutional and administrative measures needed to organize and implement the programme;

(b) Schemes of supervised credit, including hire-purchase plans for machinery and equipment;

(c) Measures such as guarantee and insurance schemes to facilitate credit to small and medium enterprises by private commercial banks;

(d) Procedures and terms of loans to small and medium enterprises, including interest rates and maximum maturity, collateral requirements, credit investigation methods and handling of defaulting cases;

(e) Evaluation of industrial projects and of credit applications;

(f) Co-ordination of financial assistance with other programmes for the promotion of small-scale and medium-sized industries, such as technical and managerial assistance, provision of factory space and services in industrial estates, and so on.

Qualifications: Financial expert familiar with the organization and operation of public and private credit facilities for the promotion of small-scale and medium-sized industries in the developing countries.

Annex V

INDUSTRIAL ESTATES

Sections A and B contain the hypothetical terms of reference for a team of two experts - an industrial economist and a civil engineer - to carry out feasibility surveys and initial planning of industrial estates for small-scale industries. Some of the functions assigned in the present example to the industrial economist may sometimes need to be discharged by, or with the co-operation of, an industrial engineer, for instance, those under A, items (a), (b) and (c).

The period of assignment may vary with local requirements and the scope of the project. In the example given, the industrial economist and the civil engineer would work as a team. In most cases, and especially in short-term missions, the period of assignment of the two experts would be the same. Sometimes, however, the civil engineer may need to join his colleague only after a few months, for example, if the latter has to complete first a preliminary economic survey.

Section C contains the job description for a mechanical engineer needed for establishing and operating a tool-room as a common service facility on an industrial estate.

Section D contains the outline of a hypothetical request to UNDP (Special Fund) for assistance in the establishment of a demonstration industrial estate.

Section E contains the job description of a project manager or chief adviser of a UNDP (Special Fund) project in the field of industrial estates.

A. Industrial Economist (Industrial Estates)
(Related to B)

Duration: Six months

Duties: The expert, specialized in small-scale industries, will, in consultation with the competent government services, and in co-operation with a civil engineer, advise the Government on the formulation and implementation of an industrial estate programme and the measures necessary to facilitate and stimulate the establishment of small-scale industries in the factories of the estate(s). In particular, the expert will:

(a) Make feasibility studies for industrial estates at alternative locations, in the light of the availability of supporting facilities and the prospective industrial development of the area; and, in the light of this survey, recommend the location, site, type and size of the estate(s), including requirements for standard factories and common service facilities;

(b) Estimate the type and number of new or existing industries suitable for establishment;

(c) For each estate, estimate the requirements in power and other utilities. For each industry, estimate the number of workers and the type, quantity and cost of the machinery needed for production at the appropriate level of capacity, and the investment costs, working capital requirements and turnover for each enterprise;

(d) Advise on the organization of an industrial estate authority and the organization and management of the industrial estate(s), including the estate's admission policies, rules and regulations, rent or sale policies, rate of charges, and so on;

(e) Advise on methods of financing the construction and development of the industrial estate(s);

(f) Advise on legislative and administrative measures needed for establishing and operating the industrial estate(s), including, if need be, provision of incentives, and assistance and servicing facilities for the occupants in the fields of technology, management and financing;

(g) Make recommendations on the organization of training and apprenticeship facilities for workers and intermediate supervisory personnel of the industries to be set up on the estate(s);

(h) Make recommendations on the number and type of fellowships needed to implement the project, e.g., for the future managers of the industrial estates or the department heads of the government authority in charge of their establishment;

(i) Make recommendations on further United Nations assistance which might be needed to carry out the project.

Qualifications:

An industrial economist with high-level experience and knowledge in the planning and establishment of industrial estates and administration of development schemes for small-scale industries. The expert should have wide practical experience in conducting investigations and surveys on the problems of small industries in developing countries. He should be conversant with the administrative, financial and operational procedures of various types of organizations and corporations, public or private, responsible for the planning, construction and operation of industrial estates.

B. Civil Engineer (Industrial Estates)
(Related to A)

Duration: Six months

Duties: In co-operation with an industrial economist, the expert will:

(a) Survey, evaluate and select the site of the industrial estate(s), taking into account, besides physical planning requirements, the availability and development prospects of power, water and other utilities, labour, transport, communications, housing and other supporting facilities;

(b) Prepare estimates of the size and number of factories and other buildings, common facilities and amenities;

(c) Prepare layout and engineering plans for factories, common service facilities, administrative and auxiliary buildings, drainage, sewerage, roads, rail lead tracks, electric stations and other utilities, and recommend appropriate building materials and techniques;

(d) Propose a development schedule for the estate(s);

(e) Advise on the zoning regulations required in connexion with the establishment of the industrial estate(s);

(f) Estimate the cost of development of the estate(s);

(g) Make recommendations on the organization of construction work and the training of construction workers and intermediate supervisory personnel.

Qualifications: A high-level civil engineer with practical experience in the planning, design and construction of industrial estates and industrial buildings.

C. Tool-room Expert
(Common Service Facility Centre - Industrial Estate)

Duration: One year

Duties: The expert is expected to carry out the following functions in close co-operation with the authority in charge of the industrial estate:

(a) Assist and advise in setting up the tool room, design office, testing room, including selection of machines, equipment, tools, testing and measuring instruments, staff, stores and supplies required and in drawing up rules, regulations, costing and operation procedures;

(b) Assist in the design and production of:
  (i) dies for press work, forging and stamping of all types;
  (ii) special tools and cutters for automatic turrets, capstan lathes and other special-purpose machines;
  (iii) gauges, simple testing tools and equipment;
  (iv) templates, jigs and fixtures;

(c) Train counterparts and assist in arranging on-the-job training of skilled workers and foremen from units in the industrial estate and outside in blueprint reading, tool and die design work and production of dies, tools, cutters, templates, jigs and fixtures.

Qualifications: A mechanical engineer with long experience in a responsible position in such departments as design office, tool-room, heat treatment shop, and testing and quality marking laboratory of a well-established engineering concern, railway workshop or similar industrial unit. Experience in the management and operation of a tool-room designed as a common service facility for small-scale industries in or outside of an industrial estate would be an additional qualification.

D. Outline of a Hypothetical Request to the United Nations Development Programme (Special Fund) for Assistance in the Establishment of a Demonstration Industrial Estate

I. BACKGROUND INFORMATION LEADING TO THE JUSTIFICATION OF THE PROJECT

1. The place of small industries in the country's industrial structure

General information on the industrial development in the country. Wherever possible information should be given on the number of small establishments and share of small industries in total production and employment.

2. Main problems limiting small industry development in the country

A brief review of the major factors limiting small industry development, such as absence of credit facilities, skilled workers, technical knowledge, good factory accommodation, and so on.

3. Policies and programmes for small industry development

(a) The industrial development policy of the Government with special reference to small-scale industries. Describe legislation, if any exists or is about to be introduced, which would offer satisfactory incentives for new industries or the expansion or relocation of existing ones.

(b) Agencies for promotion of small industries, if any, for example, small industry development corporations, service institutes, financing institutions, institutes of technology, industrial research, etc.

4. Why industrial estates

Explain how the establishment of industrial estates will contribute to the strengthening of small industries, in particular, the promotion and development of new entrepreneurship in the country.

5. Justification for Special Fund assistance

Explain why and how Special Fund assistance through a demonstration project will assist the programme of development of industrial estates and small industries in the country. Briefly describe the functioning of industrial estates, if any, in the country and their main problems.

II. THE PROJECT

1. Background of the proposal

Give a brief historical summary of the work leading to the submission of the request to the Special Fund.

2. Description of the project

Give a brief description of the objectives of the industrial estate and its functions. The following points may serve as guide-lines:

- stimulation of new enterprises in the area concerned;
- relocation of existing units;
- common facility services through workshops and laboratories;
- training of workers and foremen in the workshops and laboratories;
- extension service to small industries in and outside the estate.

The United Nations team will provide advisor services to government and other authorities in the planning and establishment of industrial estates in other locations.

3. Locations and siting

(a) Assessment of demand, existing and potential, for factory accommodation in the suggested location and in the neighbouring region.

(b) Other factors relevant to location:

(i) integration of the project with plans for industrial and residential land use and zoning, if any;

(ii) suitability of the land for industrial buildings;

(iii) availability of land for future expansion;

(iv) economical installation of utilities such as water, electricity, gas and sewage disposal;

(v) availability of economical transport;

(vi) convenient access to residential areas.

4. Planning and layout of the estate

An assessment of the prospects for industrial development in the area and of the needs of prospective tenants and the type of products they will be manufacturing should be made to serve as a guide for designing a proper layout for the estate. Information on the following points should be furnished:

(a) Size of the estate;
(b) Layout of the plots;
(c) Roads and streets;
(d) Number and size of factories and provision for future expansion.

5. Type of factory buildings

Indicate the type and number of factories proposed, and give the justification for standard factories or custom-built factories as recommended.

6. Administrative and ancillary buildings

A brief description of the general facilities and services proposed for the estate should be given to explain the need for ancillary buildings. Ancillary buildings may include administration offices, fire station, post office, bank, transport office, dispensary, canteen, warehouses, showrooms, club-rooms, and so on.

7. Technical service facilities in the estate

A brief description of the technical services and facilities proposed for the estate and their justification.

Such facilities may take the form of a fully equipped small industry service institute or may include one or several workshops such as repair and maintenance shop, machine lease shop, tool-room, testing and quality control laboratory, and so on.

Details on machinery and equipment required for such centres should be given in an annex.

8. Admission and lease policies

Describe the policies recommended for admission of tenants and for leasing, hire-purchase or sale of factories and/or improved sites.

9. Administrative arrangements

Describe the legal status of the industrial estate organization and its relations with other government organizations. Give a short account of the arrangements proposed for planning, construction, financing and management of the estate.

III. ASSISTANCE REQUESTED FROM THE SPECIAL FUND

(1) Duration of the assistance; time-table showing estimated date for work on the project, phasing and scheduled date of completion.

(2) Number of experts, fields of specialization, length of service and specific tasks within the project.

The project manager is usually appointed first. Other members of the team may include an industrial engineer, a chemical engineer, a civil engineer and other experts. If there is a concentration of a particular industry in the location, a specialist in that industry may be included in the team. A provision for short-term consultants may be included as necessary.

(3) Number, field of study and duration of fellowships for training abroad. Such fellowships may be required for the counterparts of the United Nations experts as well as for other nationals engaged in the project.

(4) Types of equipment and supplies required. The Special Fund may provide some equipment for certain common service facilities, for instance, a laboratory and a maintenance and repair shop.

IV. GOVERNMENT CONTRIBUTION

(1) Land, buildings and construction;

(2) Equipment;

(3) Staff, counterparts and auxiliary personnel;

(4) Ancillary services.

V. FINANCING

(1) Cost of Special Fund assistance, by categories as per III above, on an annual basis for each year of the project. Special Fund assistance will not normally continue beyond five years, and should diminish in each of the last three years, with the Government assuming a steadily increasing responsibility for its continuity.

(2) Government counterpart contribution, by categories as per IV above, on an annual basis.

The Special Fund will not finance expenditure in local currencies, nor will it necessarily meet all foreign currency costs of a project. The Government counterpart contribution may be made either in cash or in kind, or both.

Where the Special Fund supplies the services of experts, the Government will be expected to pay to the Special Fund in local currency an additional sum equal to 15 per cent of the full cost of such experts as a cash contribution towards the local operating costs of the project.

E. Industrial Engineer or Industrial Economist (Industrial Estates) (Chief Adviser/Project Manager of UNDP (Special Fund) Project)

Duration: One or two years initially, with possibility of extension (up to five years)

Duties: The expert is expected to:

(a) Be responsible, under the supervision of the Executing Agency, for over-all planning and execution of the project in accordance with the terms of the Plan of Operation to be signed by the Government, the Special Fund and the United Nations as Executing Agency;

(b) Supervise the work of the team of experts to be provided under the project and of the national counterpart personnel assigned to work on it;

(c) Prepare specifications for equipment and job descriptions as required, and

(d) Report directly to the Executing Agency on the progress of the project.

Qualifications: Industrial engineer or industrial economist with extensive experience in the implementation of development programmes for small-scale industries and the planning and establishment of industrial estates.

Annex VI

TECHNOLOGICAL RESEARCH, ASSISTANCE AND TRAINING

Annex VI contains the job description of a chemical engineer, who will set up and operate a testing and quality control laboratory; such a laboratory might be set up as a common service facility on an industrial estate and the expert might, if required, be a member of a UNDP (Special Fund) team for an industrial estate project.

Chemical Engineer (Testing Laboratory)

Duration: One year

Duties: The expert is expected to:

(a) Organize and set up a testing and development laboratory complying with government regulations against health hazards, including selection of staff, suitable equipment and apparatus, chemicals and other stores. The laboratory will provide testing and quality control facilities for small industries engaged in the manufacture of soaps and other toilet materials, paints and varnishes, disinfectants and detergents, insecticides and pesticides, dyes and pigments, glues and cements, salts and acids, and the like;

(b) Assist in developing correct standard compositions and production techniques for the products listed above and allied items;

(c) Assist in laying down procedures and standards of testing and quality marking;

(d) Carry out laboratory tests on local raw materials, and wherever possible, advise on substitution for imported ones, and on the development of new industries based on local materials;

(e) Visit small enterprises to identify their problems and advise them through demonstration in the laboratory or in the factory on correct and efficient production processes;

(f) Organize training of small entrepreneurs and/or their representatives in proper techniques of manufacturing and in day-to-day testing work in these factories;

(g) Train counterpart staff and laboratory assistants in carrying out analytical tests, developmental work and testing and quality marking procedures;

(h) Assist in drawing up rules, regulations, costing and operating procedures in the laboratory.

Qualifications: A chemical engineer with long experience in a responsible position in the production department, laboratory, testing and quality marking department of chemical plants engaged in some of the industries mentioned in (a) above. Experience in the operation of common service facility laboratories and extension work for small industries would be an additional qualification.

Annex VII

ENGINEERING AND MANAGEMENT ADVICE TO INDIVIDUAL INDUSTRIAL ENTERPRISES

Annex VII contains the job description of an industrial engineer who would provide direct advice and assistance to individual small-scale industrial enterprises. The job description may be focused on any specific industrial sector or group of sectors (metal-working, wood-working, textiles, etc.), according to the needs.

Industrial Engineer (Small-scale Industry)

Duration: One year

Duties: The industrial engineer is expected to:

(a) Visit small enterprises, identify their production and management problems, make productivity studies and provide appropriate guidance in production planning and scheduling, inventory control, cost reduction and cost accounting and work out incentive schemes for improving production and worker-management relations;

(b) Advise and assist new entrepreneurs in the planning and layout of factory building and plant for line or batch production, and help them in selecting machinery and equipment and in adopting production, cost, labour and inventory control methods and procedures;

(c) Undertake case studies to assess and measure by financial results the productivity of the enterprises;

(d) Organize seminars and discussions, and the dissemination and exchange of technical information; train counterpart personnel in work and method studies, production planning and scheduling and methodology of case studies.

Qualifications: Industrial or mechanical engineer with basic academic qualifications and considerable experience gained in the project and planning department of a well-organized industrial concern, or in a technical extension service agency. The candidate should be experienced in studies of production planning and control, cost reduction, inventory control and incentive schemes for small-scale industries, and their implementation.

Annex VIII

MARKETING AND EXPORT PROMOTION

Hypothetical terms of reference for two posts in the field of marketing and export promotion are given below. Section A contains a job description for a marketing expert whose main assignment is to assist in establishing a marketing organization and formulating its programme of action. Section B contains a job description for an export promotion adviser for small industry products, for promoting exports of certain articles in a European or North American market.

A. Marketing Expert (Small-scale Industry)

Duration: One year

Duties: The expert will review policies, programmes and problems in the field of marketing - both domestic and export - of products of small-scale industries in the country and will assist the Government in establishing a small industry marketing organization, and formulating its programme of action. The programme will include comprehensive measures of development and assistance, including surveys and research, dissemination of information, advertisement and publicity, quality control, certification and marking, standardization, supply of improved designs, a government purchase programme and an export promotion programme. The marketing programme should be co-ordinated with the three major activities of the Department of Industrial Promotion of the Ministry of Industry, namely, provision of industrial extension services by a small industry service institute, loans

through commercial banks, and provision of factory accommodation and common service facilities through industrial estates. The marketing organization may also carry out commercial activities in close liaison with industry associations.

Qualifications: Academic qualifications in business management, economics or allied subjects, with considerable practical experience in marketing surveys, sales and export promotion and assistance measures for small-scale industries in developing countries; experience in planning and/or managing a marketing service corporation or an export promotion organization handling products of small-scale industry would be desirable.

B. Export Promotion Adviser (Small Industry Products)

Duration: Four months

Duties: The expert will advise the concerned agency of the Government on measures to promote exports of certain small industry articles, especially leather goods, ceramics and furniture, to the market of [the European or North American country]. For a period of two months, the expert will visit and study production and marketing centres in the country and will acquire a sufficient number of samples of representative articles. In [the European or North American country] he will test consumer reaction by importers, wholesalers and dealers, and will prepare a market survey containing information and recommendations on:

(a) The type, design and specifications of articles, now produced or to be produced, which would meet the tastes and requirements of consumers in [the European or North American country];

(b) Quality standards and quality control methods, including, if need be, certification marking procedures;

(c) Study of sales prices in [the European or North American country] at the wholesale and retail levels;

(d) Exportable quantities to different market places in [the European or North American country], import and sales channels, commercial practices and procedures;

(e) Promotion measures and advertising in [the European or North American country];

(f) Legislative, financial, fiscal and customs export promotion measures and incentives, and

(g) Promotion, research and training institutions and facilities.

Qualifications: Expert or consulting firm with broad experience in export and import of small industry products. Thorough knowledge of marketing conditions in [the European or North American country] is essential.